

## **MULTI-SLICE DOUBLE INVERSION-RECOVERY BLACK-BLOOD IMAGING WITH SIMULTANEOUS SLICE RE-INVERSION**

### **Abstract of the Disclosure**

5 A multi-slice double inversion recovery (DIR) pulse sequence with read out  
of a signal for imaging successive slices implemented on a magnetic resonance image  
scanner. In the method, when the DIR pulse sequence is applied before imaging each  
slice, a slab-selective inversion re-inverts the entire slab that includes all of the slices.  
All slices are imaged within a predefined repetition time (TR). The number,  $N$ , of  
10 slices acquired per TR controls the inversion time to execute the read out of the signal  
for imaging each slice at a zero-crossing point of blood. In a test, multi-slice DIR  
images of carotid arteries were obtained with  $N$  ranging from 2-8, for four subjects.  
The results were compared with those for both standard single-slice DIR, and inflow  
saturation techniques. Multi-slice DIR with  $N=2-6$  provided blood flow suppression  
15 in carotid arteries similar to that of single-slice DIR, and significantly better than  
inflow saturation.